

Remarks

In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.

Claims 1-17 remain in this application. Claim 17 has been amended.

§ 103 Rejections

Claims 1-4 and 6-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.).

Applicants respectfully traverse this rejection because the cited references themselves do not suggest the claimed combination.

The Ainslie reference ('650) is directed to an optical fiber. This fiber contains oxide crystals. It does not contain fluoride crystals and the reference does not teach, suggest or imply the presence or the fluoride crystals. Fluorides and oxides are not interchangeable materials. For example, Pr requires fluoride host and will not work (*will not be active*) in oxide crystals.

The Auzel reference is not directed to a fiber. This reference discloses a fluoride glass ceramic material. Applicants claim a glass ceramic fiber, not a glass ceramic material. Although the material disclosed in the Auzel reference is suitable for planar amplifiers, this reference does not teach, suggest or imply that this material can be fiberized or that it can be used in fiber amplifiers. Most glass ceramic materials are not suitable for fiberization. This is because the material has to be re-heated at high temperatures suitable for fiber draw and these temperatures are above liquidus. Thus, heating glass-ceramics to high temperatures effects the crystalline phase. Thus, absent a suggestion for the combination, in the cited references themselves, applicants claims 1-4 and 6-12 are not obvious over the cited references.

Claims 5, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.) as applied to claims 1 and 7, and further in view of WO 98/54607 (Bange et al.).

Claims 5, 14 and 15 are unobvious for the same reasons that claims 1 and 7 are unobvious over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.).

In discussing the Bange reference the Examiner referred applicants to Figure 2 and page 13, line 15 of Bange specification. Figure 2 of this reference illustrates fluorescent emission curve of glass ceramic article of one of the embodiment to two different glasses - an aluminosilicate glass and ZBLAN glass. This is described on page 13, lines 10-16 of Bange specification.

The Bange reference does not specify that the Z-BLAN material's composition is the same as the ceramed composition of the disclosed embodiment. Page 13 of the Bange reference only specifies that these glasses are glasses alumina silicate glass and ZBLAN glass. These glasses have different compositions. That is, the Bange reference compares Banges ceramed composition to two types of glasses (alumina silicate and ZBLAN), but not to the same compositional material that his ceramed material is made off.

Applicants claims call for comperison between the glass ceramic and its precursor glass. For example, claim 5 explicitly specifies "wherein stimulated emission and absorption line shapes of said glass-ceramic rare earth doped fiber are narrower than that stimulated emission and absorption profile of a precursor rare earth doped glass"

Therefore, since the Bange reference does not disclose this feature, and because none of the other cited references disclose this claim element, claims 5, 14 and 15 are not unobvious over the cited references.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.) as applied to claim 7, and further in view of US Patent No. 6217204 (Arima).

Claim 13 is unobvious for the same reasons that claim 7 is unobvious over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.).

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No.

5858891 (Auzel et al.). as applied to claim 7, and further in view of WO 98/02388 (Samson et al.).

Claim 17 is unobvious for the same reasons that claim 7 is unobvious over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.).

Furthermore, claim 17 depends from claim 7 as its base claim. Claim 7 calls for a glass ceramic fiber having crystallites doped with a rare earth dopant. Claim 17 specifies that this rare-earth dopant is Nd, and that the optical amplifier is “characterized by a shift in ESA spectrum in 1320 nm to 1360 nm wavelength range, with respect to emission.” That is, applicants compared the ESA spectrum of the amplifier to its emission spectrum. Since the amplifier is made of glass ceramic fiber, the ESA spectrum and the emission spectrum is that of the glass ceramic fiber.

Thus, applicant amended claim 17 to make it even more definite, by specifying that the “shift in ESA spectrum in 1320 nm to 1360 nm wavelength range” is “with respect to emission of said rare earth doped glass-ceramic fiber”

The teaching of Samson reference are not applicable to the invention of claim 17, because the Samson reference discloses ESA shifts in glass, not in glass-ceramic as claimed by the applicants. The Samson reference does not teach, suggests or implies that ESA shifts can happen in glass ceramic. Accordingly, because the references themselves did not provide the teaching or suggestion for the claimed combination, claim 17 is not obvious over U.S. Patent No. 4936650 (Ainslie et al.) in light of U.S. Patent No. 5858891 (Auzel et al.) as applied to claim 7 above, and further in view of Patent WO 98/02388 (Samson et al.).

Conclusion

Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims 1-17 and a prompt Notice of Allowance thereon.

Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said

time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Svetlana Z. Short at (607)-974-0412.

Respectfully submitted,

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